Information pack

Lock

wild over waterways

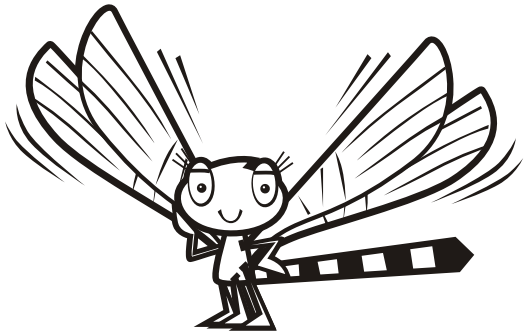
Want to be a lock expert? Then read the information in this pack.
When you've finished, why not play 'Build a Lock' or 'Lock Challenge' on the WOW web site www.wow4water.net ?

Information sheet 1

Locks

wild over waterways

Locks can be very dangerous places. The water is deep and there are strong currents. Be **SAFE** and **S**tay **A**way **F**rom the **E**dge.



What are locks?

There are many different types of locks but their main job is to raise or lower boats from one level to another.

Where canals travel up steep slopes, there will often be a series or 'flight' of locks with a stretch of water or 'pound' between each lock. These pounds allow boats to pass.

On steeper slopes you might find 'staircase' locks. These locks were built without pounds so that the top gate of one lock is the bottom gate of the next.

Do you live near any locks?

Ask your parents if they will take you to visit one.

wild over waterways

Information sheet 2

Locks

The spectators **S**tay **A**way **F**rom the **E**dge as the boat sails out of the lock.

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Information sheet 3

Locks

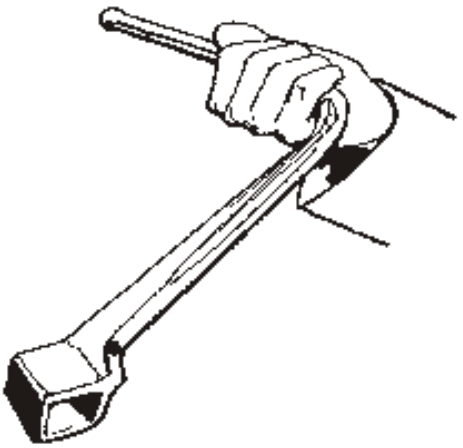
How were locks built?

Locks were dug out by navvies ('navigators') and local craftsmen built the gates and did the bricklaying.

Firstly, a pit had to be dug into the slope to make the **lock chamber**. The two longest sides were lined with bricks. In early locks the floor of the chamber was usually lined with wood but in later locks, bricks or stone were used.

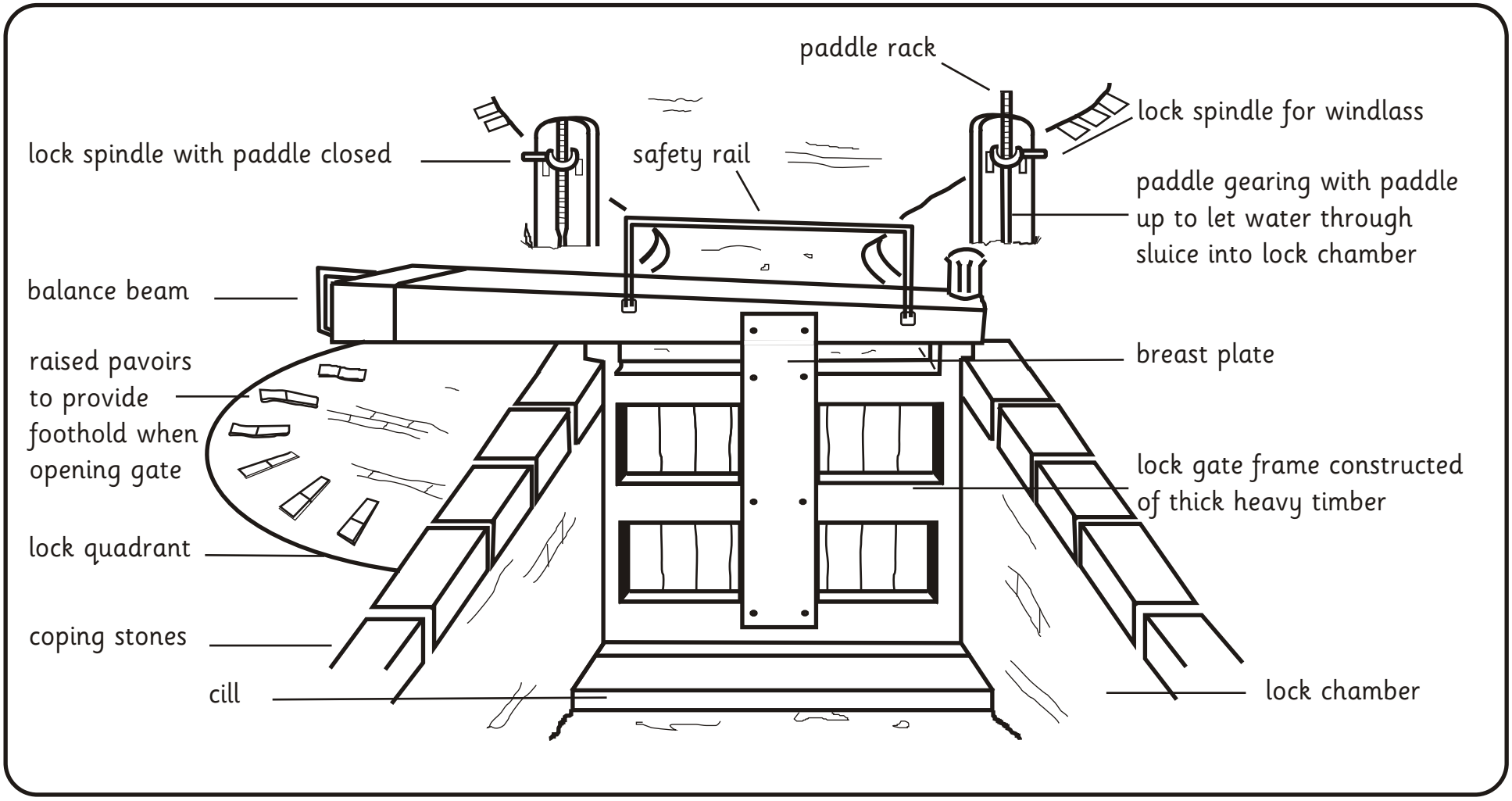
At each end of the lock chamber is a lock gate. Its frame is made of thick, heavy timber. Across the top of each lock gate is a long heavy beam which sticks out across the canal bank when the lock gate is closed. This is called a **balance beam**. With the water level, the gate can be opened by pushing on the balance beam.

Paddles are used to let the water into and out of the locks. Most early locks used ground paddles which were cut into the ground near to the lock but later paddles were often cut into the lock gates as well. Paddles can be opened to allow water to pass through sluices into and out of a lock. They can be raised or lowered by using a windlass to operate the gear wheels



Windlass

Information sheet 4
Locks


paddle rack
lock spindle for windlass
lock spindle with paddle closed
safety rail
paddle gearing with paddle up to let water through sluice into lock chamber
balance beam
breast plate
raised pavoirs to provide foothold when opening gate
lock gate frame constructed of thick heavy timber
lock quadrant
coping stones
cill
lock chamber

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Information sheet 5

Locks

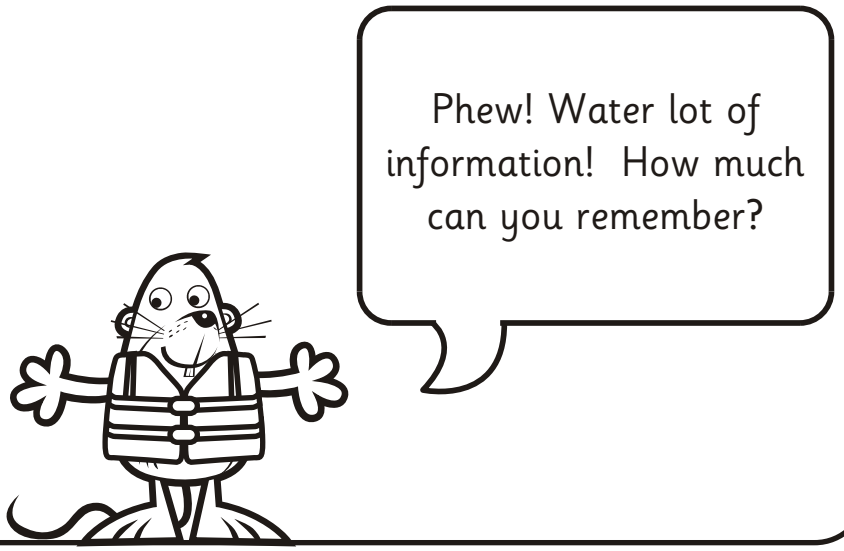
Where does the water come from?

Each time a boat travels through a narrow lock then, on average, 150 000 litres of water is used; this is enough water to have a bath every day for 2 years!

Using a broad lock (a lock which is large enough for two boats to use together) takes about 350 000 litres; imagine how many baths you could have with that!

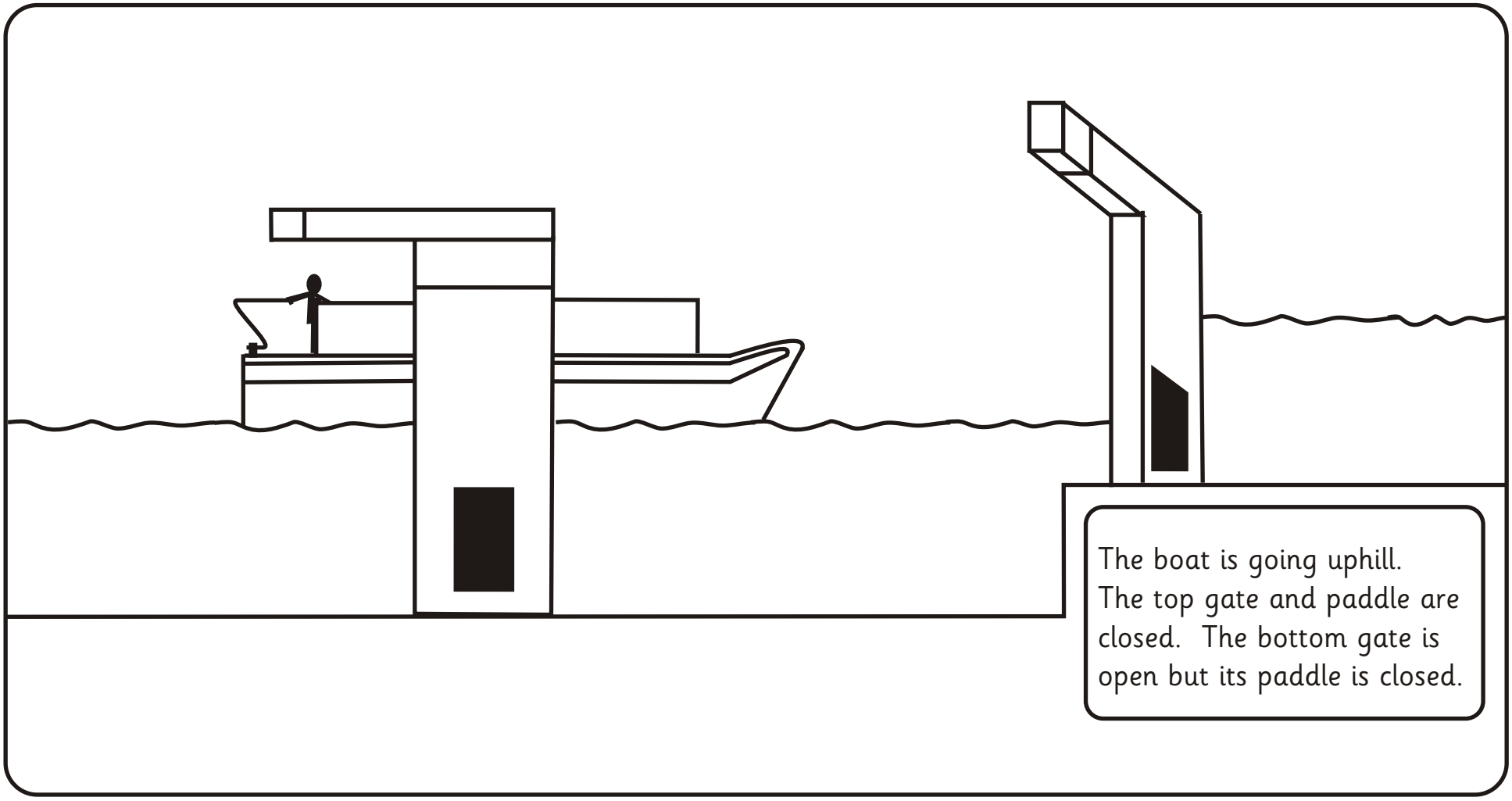
To make sure that the locks had enough water, the engineers often built reservoirs near the highest point or summit of the canal. The water then flowed along channels from the reservoir to the canal.

Where a canal travelled up a steep slope then a series or 'flight' of locks were often built. Sometimes at lock flights the engineers built side ponds alongside the locks to try and save water. Then, when the lock was emptying, some of the water from it was channelled into the side pond and could be used to part fill the lock when it was next needed.



Information sheet 6

Locks



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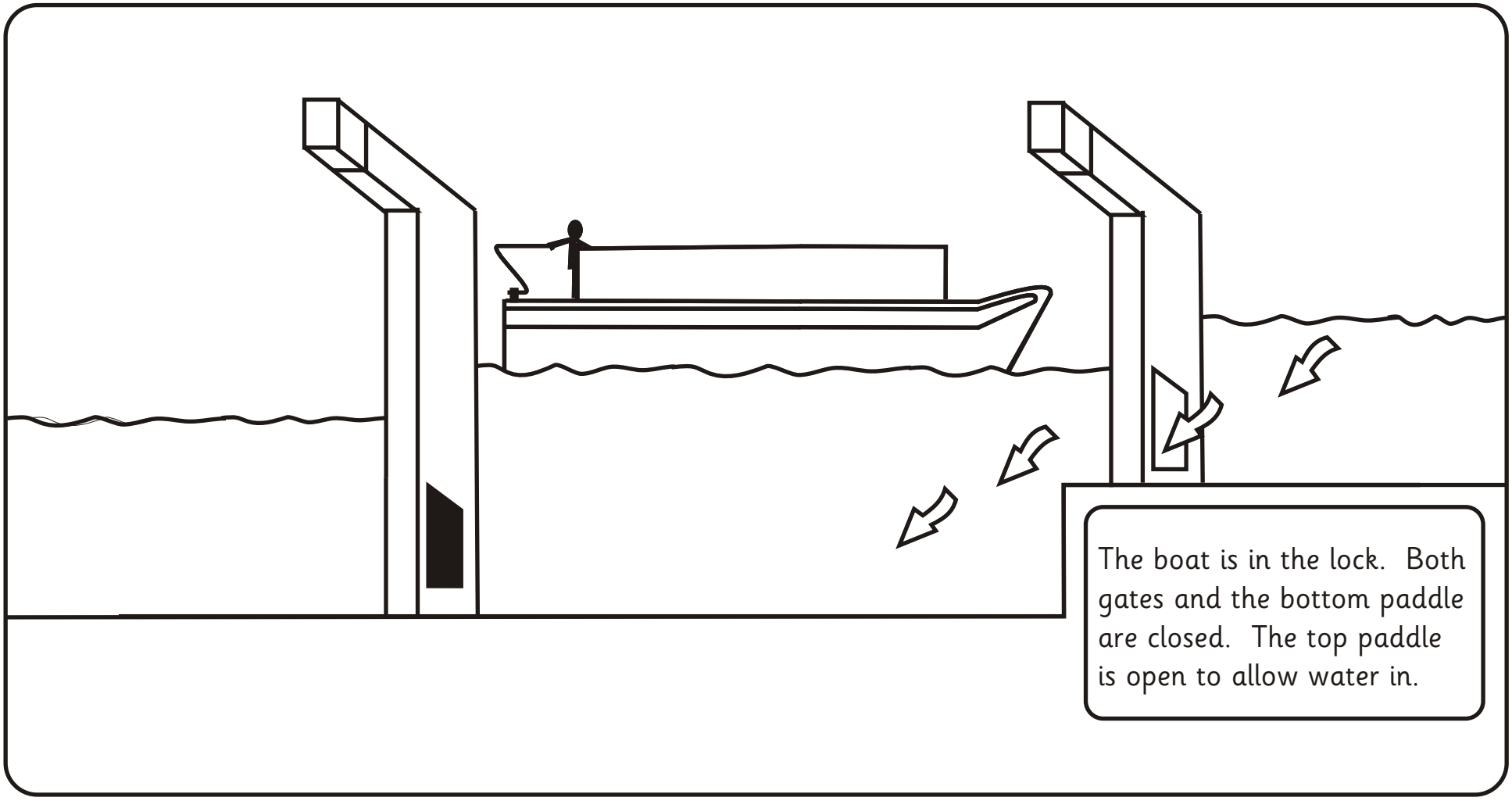
Information sheet 7

Locks



The boat is in the lock. Both gates and the bottom paddle are closed. The top paddle is open to allow water in.

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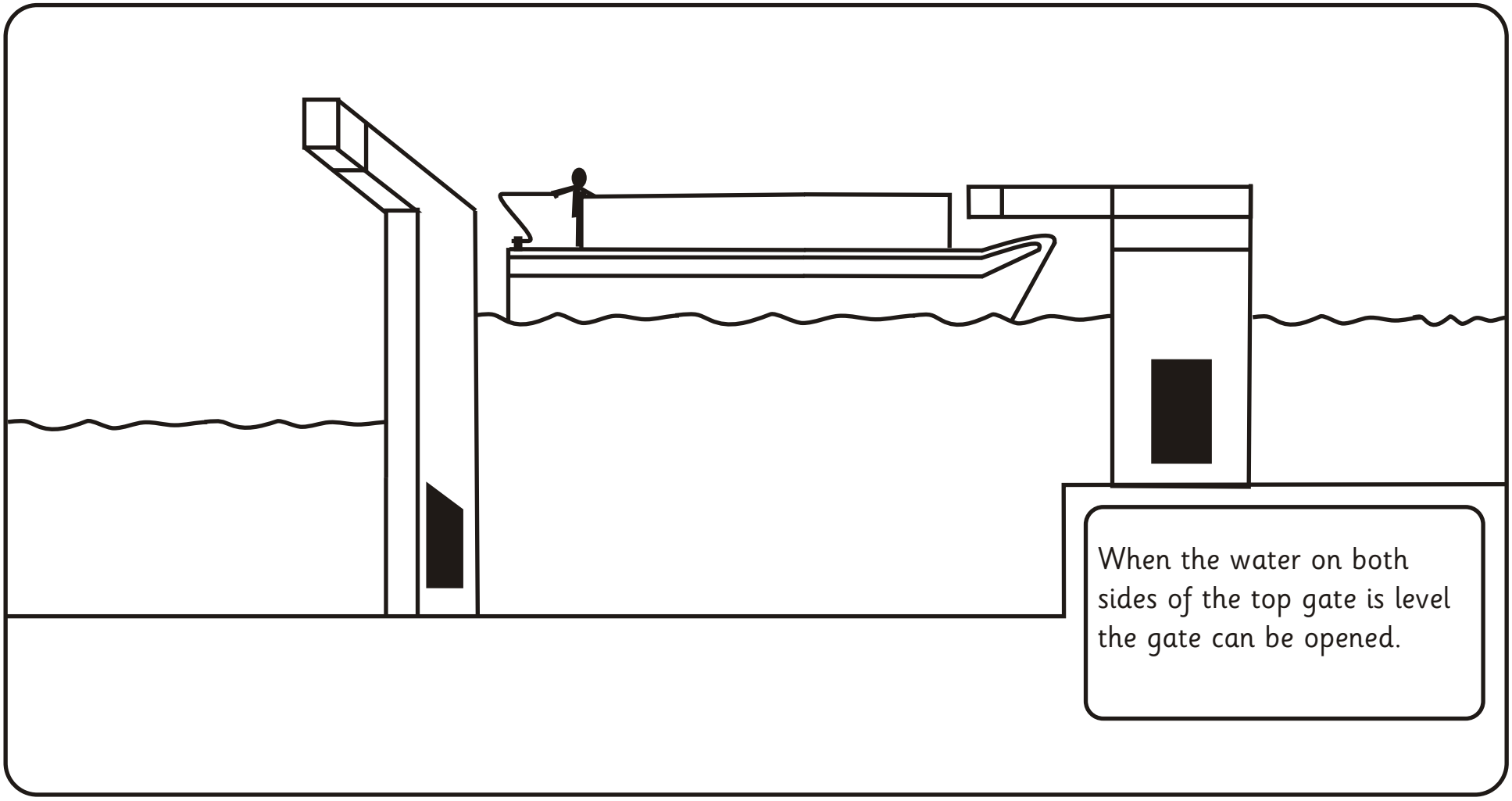
Information sheet 8

Locks



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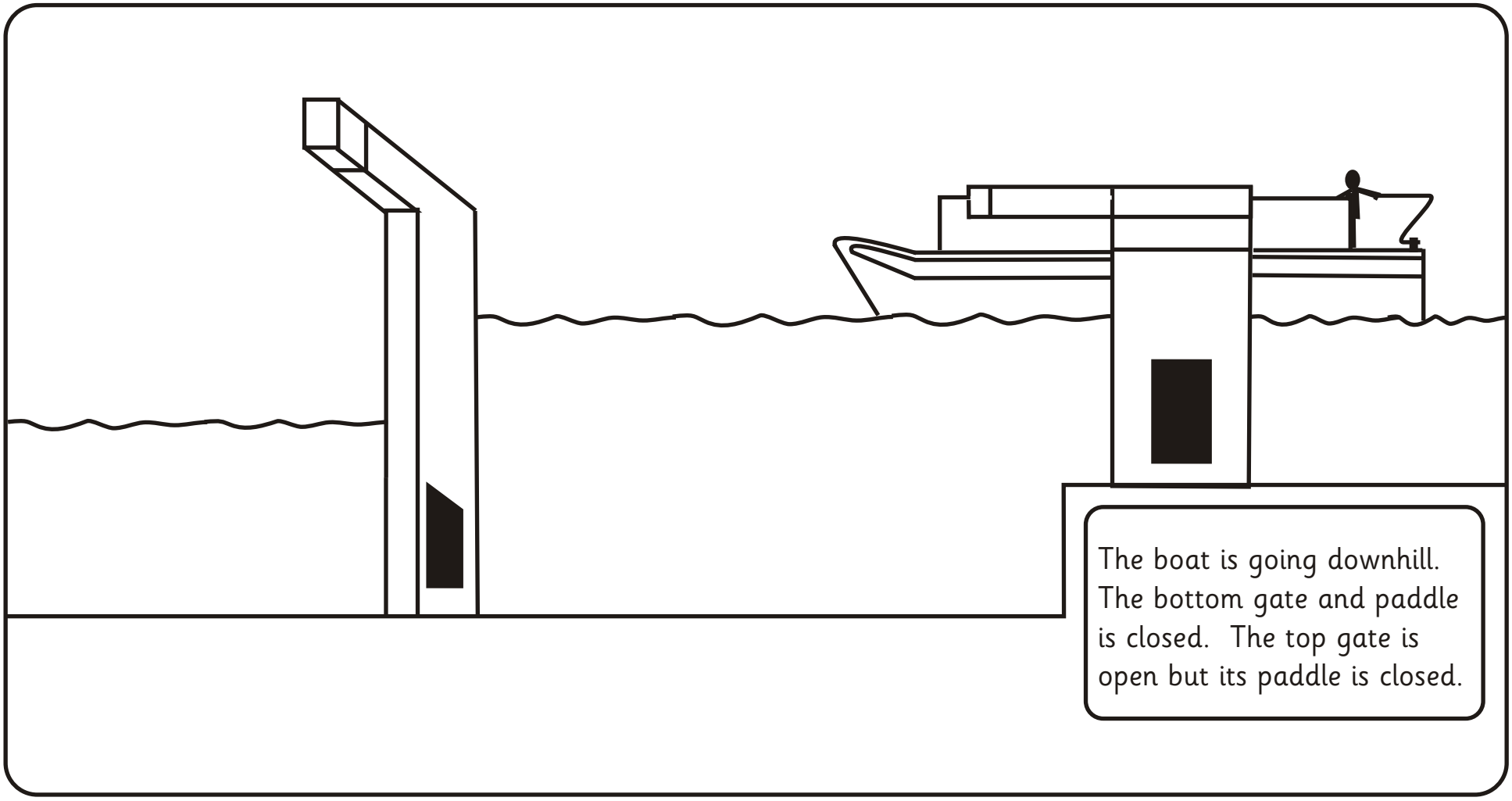
Information sheet 9

Locks



The boat is going downhill. The bottom gate and paddle is closed. The top gate is open but its paddle is closed.

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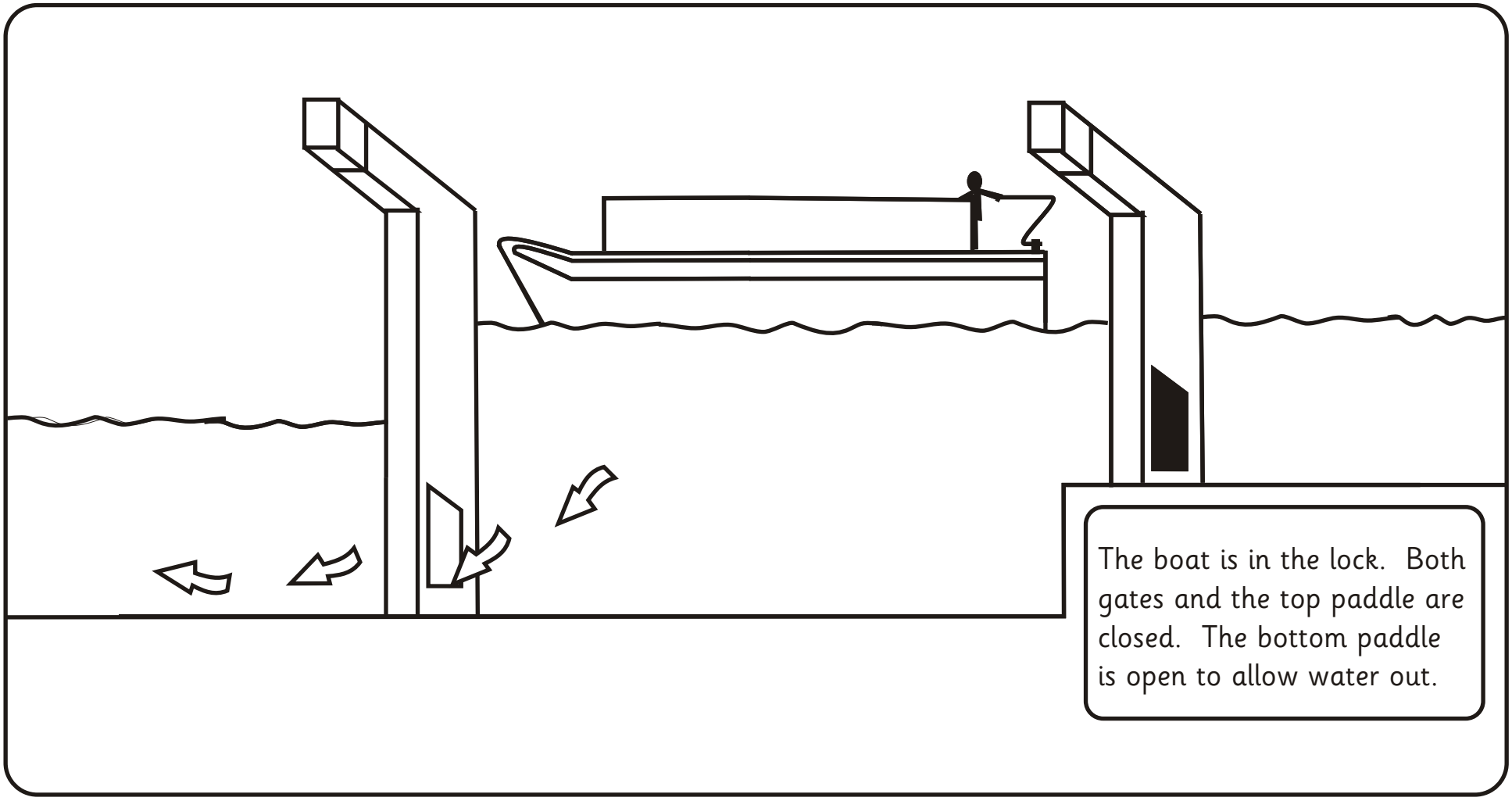
Information sheet 10

Locks



The boat is in the lock. Both gates and the top paddle are closed. The bottom paddle is open to allow water out.

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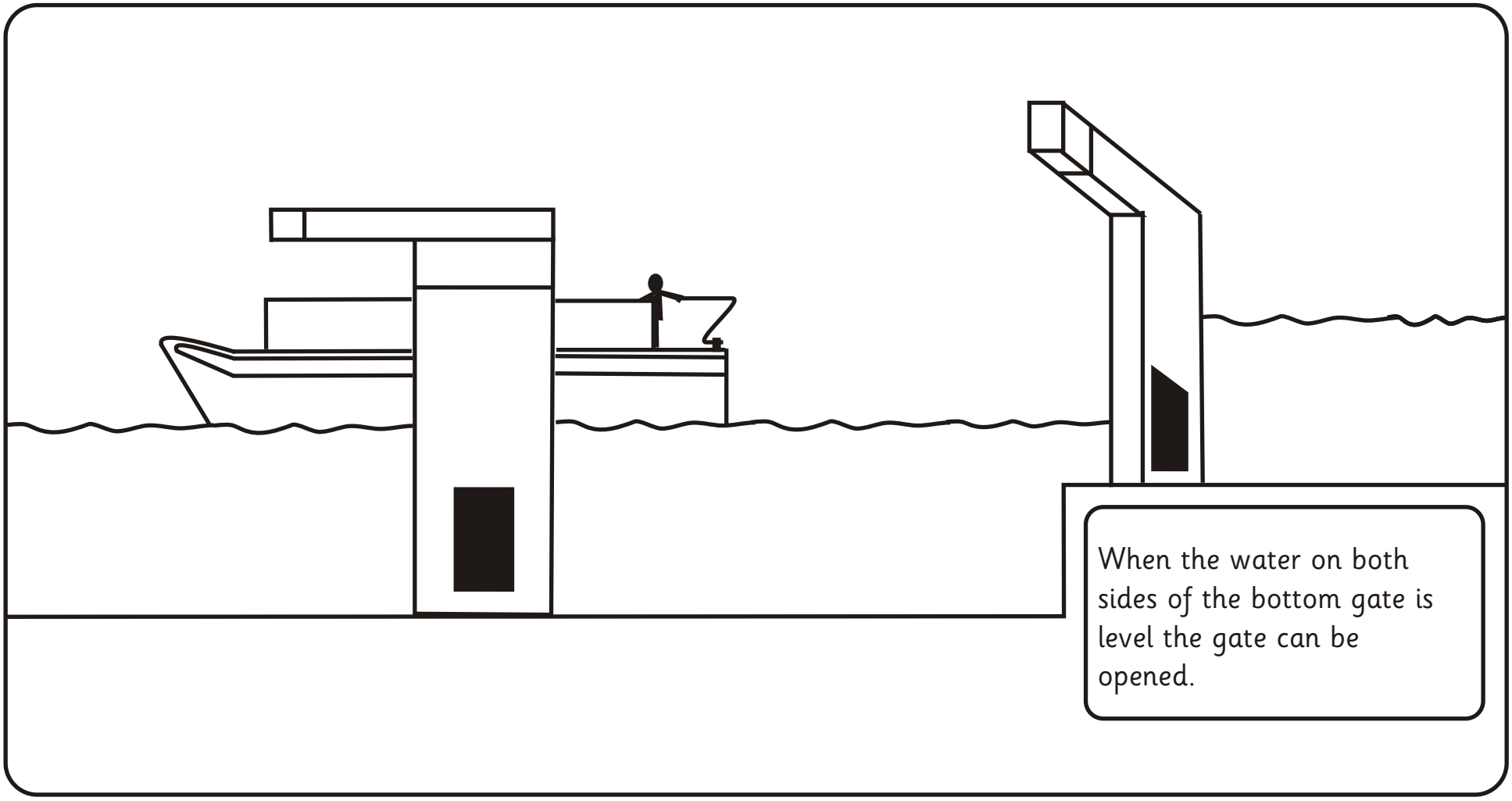
Information sheet 11

Locks



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